DATA COLLECTION SYSTEM

FEATURE CODE SUMMARY

MONTANA MDT★
DEPARTMENT OF TRANSPORTATION

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OVERVIEW

The fact that you are reading this document shows that you are willing to learn the Data Collection System methodology adopted by the Montana Department of Transportation (MDT). Anyone that contributes to the Data Collection System should become familiar with the contents of this document to assure that the Department maintains a consistent and up-to-date practice of data collection.

The basic function of the Data Collection System is to replace the hand-written field books and provide a more efficient system for collecting and storing survey data. Exchange of electronic data utilized by the Data Collection System has become an integral part of the overall mission outlined by MDT's Survey Unit. This exchange of electronic data should greatly reduce the human errors (ie transposing numbers) that are found in hand-written field books.

Utilization of data collectors will greatly increase the accuracy of the physical ground locations of the data points, while incorporating the statewide coordinate system as the horizontal & vertical datums. In addition, it will produce consistent, repeatable results and allow for the ease of adding supplement information later.

The data is collected in raw format; horizontal & vertical angles and slope distances relative to an occupied and backsight point, HIs and HTs of those points and then processed to achieve coordinates and elevations relative to the datum and coordinate system.

In addition to the raw information, the Data Collection Systems provides for the assigning of Feature Codes and their Attributes to each data point collected. Each Feature Code is given line or point symbology, which enhances the graphical representation of the data.

The Montana Department of Transportation is currently using the TDS Ranger data collector with Survey Pro software for data collection purposes. In addition, the Department is using CAiCE Visual PE for processing and editing purposes. The result of the survey is to create a graphical representation of the information (ie MicroStation DGN File) before passing it off to the Design Unit.

GENERAL

The document's intended use is to aid the end user in their effort to complete a Project by providing guidelines for collecting features (data points), while utilizing the current software and hardware of the Data Collection System. However, this document is not a substitution for good surveying practices.

This document was proposed to stand alone, but due to the nature of the specific hardware and software, the format and content reflect the usage of the current data collector and processing software.

This document will provide the end user with a better understanding of the Data Collection System by supplying them with the current Feature Codes and their respective Classes, Sub-Classes, Descriptions, General Summaries and Attributes.

FEATURE CODES

Feature Codes are a way to describe each individual data point by giving them unique names by their physical features. In addition to the Feature Codes, the data points will be given Attributes for collecting additional information that will further describe the data point.

When collecting data points, there are two distinct types of Feature Codes: Linear & Point Features.

Point Features

Point Features are represented by a single data point. Point Features should be used when a single data point or a small group of data points (not represented by a line) are to be collected.

Linear Features

Linear Features are represented by a series of two or more data points and will be connected together by a line. Make sure to use a Linear Feature if one is warranted, a series of Point Features are not a substitution.

There are also a few features that are single data points, but will be collected as a linear feature to show not only the location of the data point but also a direction.

In addition to the feature types, there are two feature categories, DTM Features and non-DTM Features.

DTM Features

DTM Features are those data points that are to be included in the 3D/Digital Terrain Model (DTM) that will represent the shape of the existing surface and will be used to calculate areas or volumes.

When collecting DTM Features, one must make sure to include all horizontal and vertical breaks in the existing surface to assure an accurate representation of the existing terrain.

Non-DTM Features

Non-DTM Features are those data points that are representing items above or below the existing surface and will not be used to calculate volumes.

When collection non-DTM Features, a general rule is that only the horizontal breaks in the existing surface be included for collection purposes. However, if a non-DTM Feature is to be later used as a DTM Feature, it must follow the guidelines for a DTM Feature or the Volumetric results may not be very representative of the existing terrain.

DOCUMENT LAYOUT

The table/field layout is used to display as much information as possible in the space allotted. There is similarity of the tables from feature to feature to assist in displaying the information so that it is easier to understand and access.

Feature Code Field

The Feature Code is used in all aspects of the Data Collection System from the data collector to the processing software to design. It is an abbreviated term representing the collected feature consisting of 2 to 8 characters.

Class Field

The Class is used to group the features into like categories.

Sub-Class Field

The Sub-Class is used to further divide the features into a smaller group of categories that are a part of the larger group (Class).

The Classes and Sub-Classes being utilized are as follows:

- Barrier
  - Fence
  - Rail

- Construction
  - Misc

- Drainage
  - Culvert
  - Irrigation
  - Water
  - Misc

- Misc
  - DTM
  - Misc

- Natural
  - Land
  - Vegetation
  - Water

- Road/RR
  - Road
  - RR
  - Signs
  - Misc

- Structure
  - Barrier
  - Tank
  - Misc

- Survey
  - Control
  - R/W
  - Misc

- Utility
  - Communications
  - Drainage
  - Gas
  - Manhole
  - Power
  - Traffic
  - Misc

Description Field

The Description is used to further explain or expand the Feature Code and is used throughout the Data Collection System.

General Summary Field

The General Summary is used to further describe the Feature Code; provide examples of how to collect the data by including verbiage, drawings or samples; and explain how they may relate to other Feature Codes.

Attributes Field

The Attributes for a Feature Code are unique to each feature and are explained in the specific fields that follow the Attributes. There are three different data types; String, Numeric and Menu utilized when entering information into the Attributes' fields.

The **String Field** is used when the Attribute contains information that will be generic in nature. The user has the flexibility to use any character available when entering the data. String Fields have a maximum length of 40 characters.

The **Numeric Field** is used when the Attribute contains information that will be of a numeric nature. The user is limited to using only numerals and constrained by the field's upper and lower limits and the number of decimals assigned for the specific Attribute field. The field also has a default value that must be left as is unless the intent is to enter a new value.

The units for a Numeric Field are not entered into the field, but designated by the Attribute itself. In addition, the decimal places; the minimum, maximum and default values and the units will be listed for each Attribute field that utilizes a numeric data type.

The **Menu Field** is used when the Attribute contains information that will be specific in nature. The user is limited to the given choices for the specific Attribute field. A choice of a 'blank' is giving as the default for most Attribute fields and is intended to be used for fields that are intentionally to be left blank; otherwise, a selection should be made for all Attribute fields.

In addition, a choice of other is given when something unexpected or rare is encountered for the Attribute. In this case, the user should further explain by collecting additional information in another manner or format (ie adding comments or notes or by taking digital photos, etc).

COMMON FIELDS

The following is a brief explanation of some of the common fields used in the Attributes for the features.

Comment Fields

All features have a Comment Field (**comment**) that should be used to further describe the feature. In addition, if more space is needed, a Note can be added for the data point being collected.

Note Field

A Note Field, found in another area of the data collector, can have upto 256 characters; therefore, additional instances of notes may be needed for a lengthy explanation. (The Note Field is specific to the Survey Pro data collection software and can be accessed by the shortcut keys **Ctrl B**.)

Chain Field

All Linear Features have a Chain Field (**Chain**). This field is used to name the chain/line of the Linear Feature with a unique name and thus provides connectivity (a line) through the appropriate data points.

Utilization of the 2-character codes (supplied in other documents) as a prefix and an incremental 2-digit number as the suffix is highly recommended. Each unique line shall be given its own chain name to avoid duplicate names that will create problems in the processing of the data. However, if the chain is to be connected throughout the length of the Project it is a good idea to keep the chain names the same for each segment/file.

Remember: A chain code of all numeric values will not work. At a minimum, there must be at least one alpha character for the suffix.

Some of the Point Features have Chain Fields allowing a linear feature to pass through the data point without collection of an additional data point for the Linear Feature. Collect the data point as a Point Feature, but add the name of the chain that will pass through the data point in the Chain Field.

The Chain Fields also have the ability to accept more than one chain code for any given data point. This is accomplished by entering multiple codes in the Chain Field (ie BS01,GB01,BS03). This represents multiple chains passing through the same data point, not multiple chain data points with the same physical location.

The Chain Field also has the ability to place a Gap in any chain. A Gap in the chain is represented by not drawing the chain between the point with the Gap (G) command and the next collected point in the chain.

> **Example**:   If you collected data for a Fence Chain and wanted to break the chain for an opening, you would code the first point as **FN01 G** and the next point in the chain as **FN01**. Note the space between the chain name and the letter 'G'.
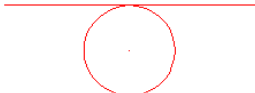
This would break the chain visually and for all practical purposes would appear as two separate graphic lines; however, when editing, it would be treated as one chain. This also works with multiple chain names; make sure to place the letter 'G' after the appropriate code.
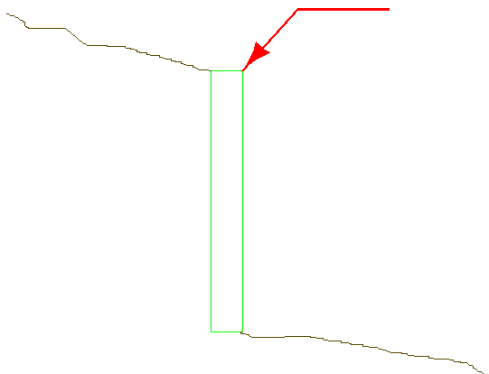
Other variations and codes are available, but will not be discussed as part of this document.
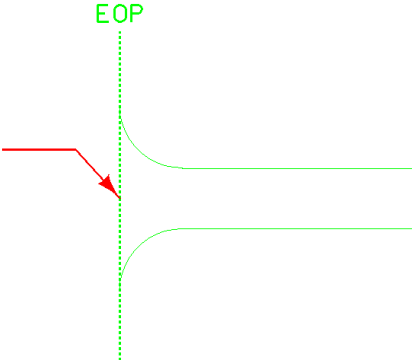
Remember: A chain takes on the attributes of the first data point on the chain. Therefore, you can only begin one chain on any data point and that data point must have the feature code that is to be assigned to the chain. In addition, once a chain is started, the subsequent data points do not have to have the same Feature Code as the chain allowing the start of other chains on data points of an existing chain. Some fore thought may be needed to collect data points for complex connections when multi-coding a data point.
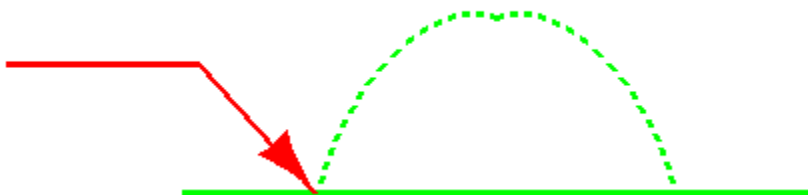
FEATURES

Following is a compilation of the current features that are collected with the Data Collection System.
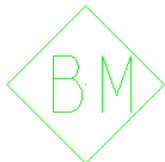
2FACE		Class	Sub-Class
		Road/RR	Signs
Description		SIGN – TWO-FACE	
General Summary			
This feature is to represent a single-post two-faced sign. The data point collected should represent the center of the post.			
Attributes			
COMMENT		A String Field used to enter general comments.	

ABUT		Class		Sub-Class	
		Structure		Barrier	
Description		CONCRETE ABUT/RETAIN WALL			
General Summary					

This feature is to represent a concrete abutment or retaining wall. The data points collected should represent the top of the leeward face of the abutment or retaining wall.

Additional data points will need to be collected for the existing ground at both the bottom and top of the concrete abutment/retaining wall.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie AB01).
Width	A Numeric Field used to enter the **Width** of the Abutment or Retaining Wall. Decimals: 0, Minimum: 0, Maximum: 1000, Default: 0, Units: mm
COMMENT	A String Field used to enter general comments.

APP		Class	Sub-Class
		Road/RR	Misc
Description	APPROACH		
General Summary			

This feature is to represent an approach. The data point collected should represent the center of the approach at the edge of the Finished Surface.

Attributes	
Type	A Menu Field used to select the **Type** of Approach being collected. The values are Farm Field, Public, Private, Urban Driveway and other.
Name	A String Field used to enter the **Name** given to the Approach.
Width	A Numeric Field used to enter the **Width** of the Approach. Decimals: 1, Minimum: 0, Maximum: 25, Default: 0, Units: m
COMMENT	A String Field used to enter general comments.
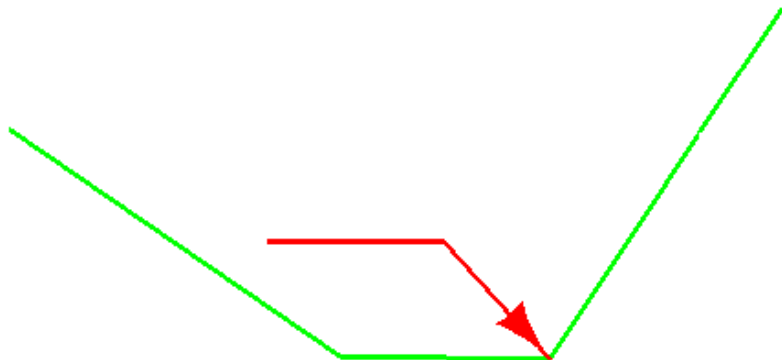
BITCURB	Class	Sub-Class
	Road/RR	Road
Description	BITUMINOUS CURB	

General Summary		

This feature is to represent a bituminous curb. The data points collected should represent the front (centerline side) of the bituminous curb.

Bituminous Curb can be collected in conjunction with guardrail (GRRL), since they should produce the same horizontal line.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie BC01).
Type	A Menu Field used to select the **Type** of Bituminous Curb being collected. The values are Median Curb, Shoulder Curb and other.
COMMENT	A String Field used to enter general comments.
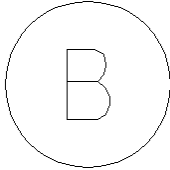
BLDG	Class	Sub-Class
	Structure	Misc
Description	BUILDING BOUNDARY	

General Summary
This feature is to represent a building boundary. The data points collected should represent the outside edges (walls/corners) of the building. Make sure to include all irregular shapes and enclose the building boundary as an area.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie BG01).
Owner/Address	A String Field used to enter the **Name**, **Owner** or **Address** of the building.
COMMENT	A String Field used to enter general comments.

BM	Class	Sub-Class
	Survey	Control
Description	BENCHMARK	
General Summary		

This feature is to represent a benchmark. The data point collected should represent the top center of the mark.

Attributes	
COMMENT	A String Field used to enter general comments.

BNDRY	Class	Sub-Class
	Misc	DTM
Description	PROJECT BOUNDARY	

General Summary
This feature is to represent a project boundary. The data points collected should represent the outer most data points of the area being collected. Make sure to enclose the project boundary as an area. Multiple boundaries may be utilized in one project if the areas to be collected are not adjacent to one another.
The most common use of the Project Boundary is to enclose areas that will be used to generate DTMs.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie BY01).
COMMENT	A String Field used to enter general comments.

BOB		Class	Sub-Class
		Natural	Land
Description		BOTTOM OF BANK	
General Summary			
This feature is to represent a bottom of bank (natural made slope). The data points collected should represent the lower most break of the bank.			
Attributes			
Chain		A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie BB01).	
COMMENT		A String Field used to enter general comments.	

BOD		Class	Sub-Class
		Road/RR	Road
Description		BOTTOM OF DITCH	
General Summary			

This feature is to represent the bottom of a ditch section. The data points collected should represent the lower most break of the ditch. In the event the ditch is not a V-ditch, the lower most is usually the farthest from centerline; however, this does not alleviate the need to pick up the front break in the ditch section.			
Attributes			
Chain		A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie BD01).	
Type		A Menu Field used to select the **Type** of Ditch Section being collected. The values are Roadway, Drainage, Irrigation and other.	
COMMENT		A String Field used to enter general comments.	

BOLLARD	Class	Sub-Class
	Road/RR	Misc
Description	BOLLARD	

General Summary

This feature is to represent a bollard or other such barrier. The data point collected should represent the center of the bollard.

Attributes	
Diameter	A Numeric Field used to enter the **Diameter** of the Bollard. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
COMMENT	A String Field used to enter general comments.

BOS	Class	Sub-Class
	Road/RR	Road
Description	BOTTOM OF SLOPE	

General Summary

This feature is to represent a bottom of slope (man-made slope). The data points collected should represent the lower most break of the slope.

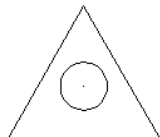| **Attributes**	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie BS01).
COMMENT	A String Field used to enter general comments.

BRCOR		**Class**	**Sub-Class**
		Structure	Misc
Description	BRIDGE BOUNDARY		
General Summary			
This feature is to represent a bridge boundary. The data points collected should represent the overall shape of the bridge. Include additional collected points as necessary to completely represent the structure for irregular shapes and for curvature. Make sure to enclose the bridge boundary as an area.			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie BR01).		
COMMENT	A String Field used to enter general comments.		

CATGRD		**Class**	**Sub-Class**
		Barrier	Fence
Description	CATTLEGUARD		
General Summary			
This feature is to represent a cattle guard. The data points collected should represent the outer most edge and center along stationing of the cattle guard grate (see above graphic).			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie CG01).		
Length	A Numeric Field used to enter the **Length** of the Cattleguard. The Length of the Cattleguard is measured with stationing. Decimals: 1, Minimum: 0, Maximum: 25, Default: 0, Units: m		
COMMENT	A String Field used to enter general comments.		

CHEV	Class	Sub-Class
	Road/RR	Signs
Description	SIGN -- CHEVRON	
General Summary		

This feature is to represent a chevron sign. The data point collected should represent the center of the post.

Attributes	
Type	A Menu Field used to select the **Type** of Chevron being collected. The values are Dual, Single and other.
COMMENT	A String Field used to enter general comments.

CONC	Class	Sub-Class
	Road/RR	Road
Description	CONCRETE	
General Summary		

This feature is to represent the edge of concrete. The data points collected should represent the edge of a concrete slab.

A common use would be to represent the back edge of a sidewalk.

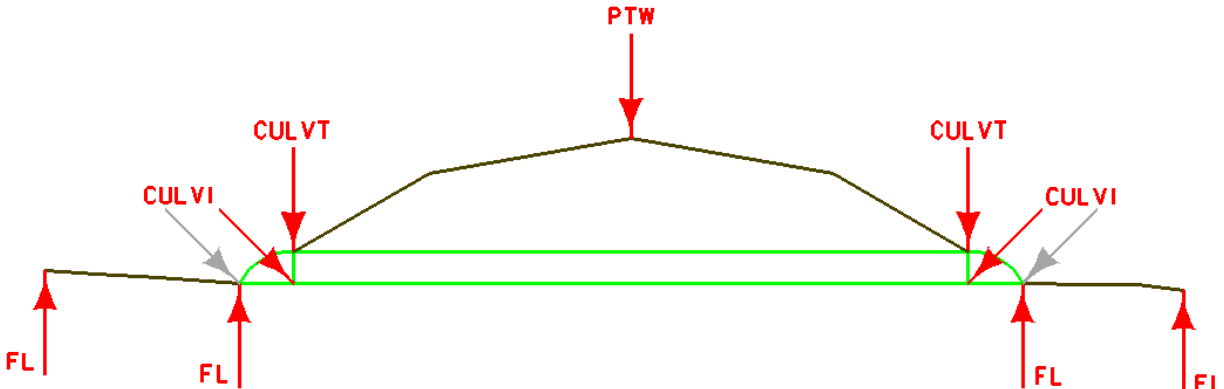| **Attributes**	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie CN01).
COMMENT	A String Field used to enter general comments.

CORE	Class	Sub-Class
	Misc	Misc
Description	DRILL HOLE	
General Summary		

This feature is to represent a core/drill hole. The data point collected should represent the center of the hole.

Attributes		
Name	A String Field used to enter a **Name** or associated ID (ie Lab #).	

CP	Class	Sub-Class
	CONSTRUCTION	MISC
Description	CATCH POINT	
General Summary		
This feature is to represent a position on the ground at the intersection of either the top of a cut or toe of fill area with the existing ground.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie CP01).	
comment	A String Field used to enter general comments.	
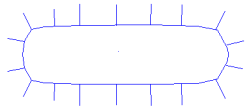
CULVI	Class	Sub-Class
	Drainage	Culvert

Description	END OF PIPE/CULV INVERT

General Summary

This feature is to represent an end of pipe or culvert invert. The data points collected should represent the outer most edge of the pipe. The end section will be collected as part of the procedure by identifying it in the Attributes; however, the culvert end may be shot also, thus giving four (4) shots for CULVI (remember to shoot them in order).

The common data points associated with this feature are: centerline of roadway (PTW), top of culvert/pipe (CULVT), end of pipe/culvert invert (CULVI) and a representation of the surrounding surface of the inlet and outlet. The flow lines (FL) do not connect through the culvert; use separate chain codes for each one.

The number of data points collected for the surrounding surface, is dependent on the type of survey requested and on what is to be done to the culvert during the Construction Phase of the Project.

In addition, Hydraulics would like pictures of both the Inlet and Outlet of all culverts, especially major ones. Rename the pictures, so that they reflect the culvert (ie point number or chain name). The pictures can be archived (zipped) and upload to the DI Directory.

Attributes

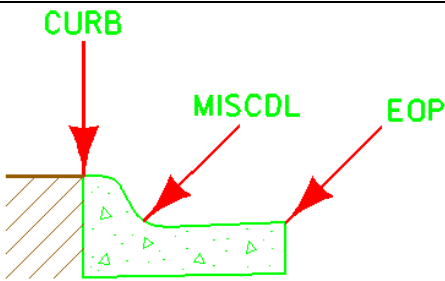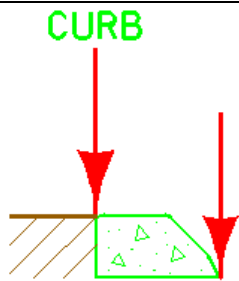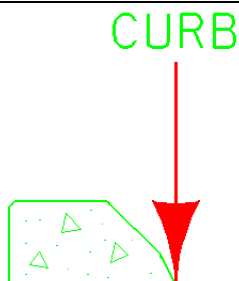| **Chain**	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie CV01).
Type	A Menu Field used to select the **Type** of Culvert being collected. The values are CMP/DR, CMP/IRR, CMP/Siphon, RCP/DR, RCP/IRR, RCP/Siphon, SSPP, CMPA/DR, CMPA/IRR, RCPA/DR, RCP/IRR, SSPPA, RCB – Single Cell, RCB – Double Cell and other. RCB – Single & Double Cell both have a sub-Type with values for the size of cells.
Coating	A Menu Field used to select the type of **Coating** is on the Culvert being collected. The values are Bituminous and other.

Usage	A Menu Field used to select the type of **Usage** the Culvert has that is being collected. The values are Drainage, Stockpass, Drainage/Stockpass and other.
Size-Equivalent	A Numeric Field used to enter the **Size-Equivalent** (diameter) of the Culvert. The size-equivalent of the culvert is the diameter for round pipe, an equivalent size for arch pipe (see Culvert Size-Equivalent Chart). This field is not used for RCB. Decimals: 0, Minimum: 0, Maximum: 10000, Default: 0, Units: mm
Culvert End	A Menu Field used to select the type of **Culvert End** that is at the end of the Culvert being collected. The values are Square, FETS, RACET, 1.5:1 Bevel, 2:1 Bevel, 2.5:1 Bevel, 1.5:1 Step Bevel, 2.5:1 Step Bevel, RCB Sloped, RCB 30° Flared and other.
End Treatment	A Menu Field used to select the type of **End Treatment** that is at the end of the Culvert being collected. The values are Cutoff Walls and other.
Edge Protection	A Menu Field used to select the type of **Edge Protection** that is at the end of the Culvert being collected. The values are Concrete, Riprap and other.
Damaged End	A Menu Field used to select if there is a **Damaged End** that is at the end of the Culvert being collected, if any. The values are Yes and No.
Clean	A Menu Field used to select the type of **Cleaning** that is needed at the end of the Culvert being collected, if any. The values are 0% Full, 25% Full, 50% Full, 75% Full, 100% Full, Totally Buried, Obstruction and other.
COMMENT	A String Field used to enter general comments.

CULVT		Class	Sub-Class
		Drainage	Culvert
Description	TOP OF CULVERT		
General Summary			

This feature is to represent the top of culvert or pipe. The data point collected should represent the top edge of the culvert or pipe, excluding the end section.

Attributes	
COMMENT	A String Field used to enter general comments.

CURB		**Class**	**Sub-Class**
		Road/RR	Road
Description	TOP BACK OF CURB		
General Summary			

This feature is to represent a curb section. The data points collected should represent the top back of the curb if the curb is back filled (see first and second graphics) and the front face of the curb if there is no back fill (see third graphic).

The first and second graphics represent typical curb & gutter and cast-in-place median curb, respectively. The third graphic is representative for pin-down curb (ie parking lot barriers).

Other data points may be necessary to fully define this feature.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie CU01).
Type	A Menu Field used to select the **Type** of Curb being collected. The values are Curb & Gutter, Valley Gutter, Cast-in-Place, Pin-Down, Cut-Off, Standup Curb and other. Standup Curb has a sub-Type with values of Curb & Gutter, Median Curb and other.
Width	A Numeric Field used to enter the **Width** of the Curb. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
Height	A Numeric Field used to enter the **Height** of the Curb. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
COMMENT	A String Field used to enter general comments.

DATAPT	Class	Sub-Class
	Misc	Misc
Description	Misc Data Point	
General Summary		
This feature is to represent a miscellaneous data point. The data point collected should represent a feature that is secondary data point.

The most common use of DATAPT is to be the secondary data point for SIGNS or PHOTO. | | |
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).	
comment	A String Field used to enter general comments.	

DTCHBLK	Class	Sub-Class
	Drainage	Misc
Description	DITCH BLOCK	
General Summary		

This feature is to represent a ditch block. The data point collected should represent the top center of the ditch block.

Additional information will be necessary to define the ditch block for DTM purposes. | | |
| **Attributes** | | |
| **COMMENT** | A String Field used to enter general comments. | |

EDGEWAT	Class	Sub-Class
	Natural	Water
Description	EDGE OF WATER	
General Summary		
This feature is to represent the edge of water. The data points collected should represent the outer edge of a waterway.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie EW01).	
COMMENT	A String Field used to enter general comments.	

EOG		Class	Sub-Class
		Road/RR	Road
Description		EDGE OF ROAD -- GRAVEL	
General Summary			
This feature is to represent a gravel roadway. The data points collected should represent one of the outer edges of the gravel roadway.			
Attributes			
Chain		A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie EG01).	
COMMENT		A String Field used to enter general comments.	

EOP		Class	Sub-Class
		Road/RR	Road
Description		EDGE OF ROAD -- PAVEMENT	
General Summary			
This feature is to represent a paved roadway. The data points collected should represent one of the outer edges (top finished surface) of the paved roadway.			
Attributes			
Chain		A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie EP01).	
COMMENT		A String Field used to enter general comments.	

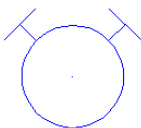| EOT		Class	Sub-Class
		Road/RR	Road
Description		EDGE OF ROAD -- TRAIL	
General Summary			
This feature is to represent an un-maintained roadway. The data points collected should represent one of the outer edges of the un-maintained roadway.			
Attributes			
Chain		A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie ET01).	
COMMENT		A String Field used to enter general comments.	

FENCE	Class	Sub-Class
	Barrier	Fence

Description	FENCE

General Summary

This feature is to represent a fence. The data points collected should represent the face of the fence on top of the existing surface. Data points should be collected at center face of posts when encountering changes in direction and fence openings.

Each new type of fence must have a new chain name and the new attributes for the fence must be entered on the first point for that chain. Because of how double coding works, it is best to collect the data in the order of the numbers in the graphic.

The information displayed in the graphic shows the **Feature Code** at the top and the **Chain Code** at the bottom for each indicated data point.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie FN01).
Type	A Menu Field used to select the **Type** of Fence being collected. The values are Wire, Combo, Chain Link, Misc and other.
	Wire has a sub-Type with values of Type F2, Type F3, Type F4, Type F5, Type F6, Type F7 and other.
	Combo has a sub-Type with the values of Type F1-813WW, Type F1-990WW, Type F1-1220WW, Type F2-813WW, Type F2-890WW, Type F2-915WW, Type F2-990WW, Type F2-1220WW, Type F3-813WW, Type F3-890WW, Type F3-915WW, Type F3-990WW, Type F4-813WW, Type C (Interstate) and other.
	Chain Link has a sub-Type with values of 915mm, 1220mm, 1520mm, 1830mm, 2440mm and other.
	Misc has a sub-type with values of Electrical, Jackleg-Rail, Jackleg-Wire, Stock Panel, Wood Rail and Woven Wire.

Wire Type	A Menu Field used to select the **Wire Type** of the Fence being collected. The values are Barbed Wire, Smooth Wire and other.
Post	A Menu Field used to select the **Post** type of Fence being collected. The values are Wood Post, Metal Post and other.
Height	A Numeric Field used to enter the **Height** of the Fence. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
COMMENT	A String Field used to enter general comments.

FH		Class	Sub-Class
		Utility	Water
Description		FIRE HYDRANT	
General Summary			

This feature is to represent a fire hydrant. The data point collected should represent the top center of the fire hydrant.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
COMMENT	A String Field used to enter general comments.

FIBERU		Class	Sub-Class
		Utility	Communication
Description		FIBER-OPTIC CABLE -- UNDERGROUND	
General Summary			

This feature is to represent an underground fiber optic cable. The data points collected should represent the painted/flagged marks located on the existing surface.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie FU01).
COMMENT	A String Field used to enter general comments.

FIBERX	Class	Sub-Class
	Utility	Communication
Description	FIBER-OPTIC CABLE -- OVERHEAD	
General Summary		
This feature is to represent an overhead fiber optic cable. The data points collected should represent the center of the fiber optic cable. Actual elevations are required for the overhead fiber optic cable.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie FX01).	
COMMENT	A String Field used to enter general comments.	

FL	Class	Sub-Class
	Natural	Water
Description	FLOWLINE -- WITH FLOW	
General Summary		
This feature is to represent a flow line. The data points collected should represent the lowest point in the flow area and should be collected in the direction of flow.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie FL01).	
COMMENT	A String Field used to enter general comments.	

FLU	Class	Sub-Class
	Natural	Water
Description	FLOWLINE -- AGAINST FLOW	
General Summary		
This feature is to represent a flow line. The data points collected should represent the lowest point in the flow area and should be collected against the direction of flow.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie FL01).	
COMMENT	A String Field used to enter general comments.	

GAS	**Class**	**Sub-Class**
	Utility	Gas
Description	GAS LINE -- UNDERGROUND	
General Summary		
This feature is to represent an underground gas line. The data points collected should represent the painted/flagged marks located on the existing surface.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie GA01).	
COMMENT	A String Field used to enter general comments.	
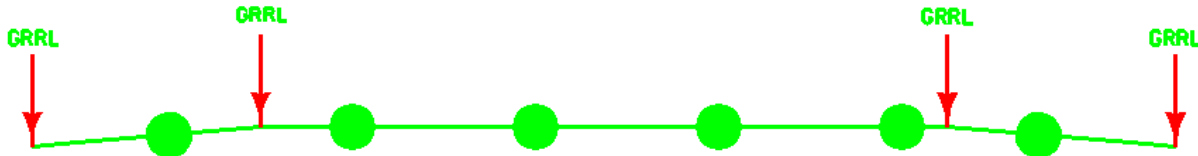
GASM	**Class**	**Sub-Class**
	Utility	Gas
Description	GAS METER	
General Summary		
This feature is to represent a gas meter. The data point collected should represent the center of the gas meter.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).	
Pipe Diameter	A Numeric Field used to enter the **Pipe Diameter** of the Gas Meter. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm	
COMMENT	A String Field used to enter general comments.	

GASV		**Class**	**Sub-Class**
		Utility	Gas
Description	GAS VALVE		
General Summary			

This feature is to represent a gas valve. The data point collected should represent the center of the gas valve.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Gas Valve being collected. The values are Above Ground and Below Ground.
Pipe Diameter	A Numeric Field used to enter the **Pipe Diameter** of the Gas Valve. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
COMMENT	A String Field used to enter general comments.

GATE		**Class**	**Sub-Class**
		Barrier	Fence
Description	GATE		
General Summary			

This feature is to represent a fence gate. The data points collected should represent the opening of the gate (ie center face of fence post).

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie GT01).
Type	A Menu Field used to select the **Type** of the Gate being collected. The values are Type G-1 (wood), Type G-2 (wire), Type G-3 (metal), Chain Link, Pipe Gate and other.
Width	A Numeric Field used to enter the **Width** of the Gate. Decimals: 1, Minimum: 0, Maximum: 50, Default: 0, Units: m
COMMENT	A String Field used to enter general comments.

GB		Class	Sub-Class
		Misc	DTM
Description	BREAKLINE/GRADE BREAK		
General Summary			
This feature is to represent a generic breakline or grade break. The data points collected should represent the break.			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie GB01).		
COMMENT	A String Field used to enter general comments.		

GRND		Class	Sub-Class
		Misc	DTM
Description	GROUND SHOT/MASS POINT		
General Summary			
 This feature is to represent a random ground shot or mass point. The data point collected should represent the center of the mass.			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix.		
COMMENT	A String Field used to enter general comments.		

GRRL		Class	Sub-Class
		Barrier	Rail
Description	GUARDRAIL		
General Summary			

This feature is to represent guardrail. The data points collected should represent the face of the guardrail at existing surface level. Data points should be collected at post locations to best represent angle points in the guardrail.

The end sections are just an extension of the guardrail; therefore, the data points shall be included in the run of guardrail for collection purposes.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie GR01).
Type	A Menu Field used to select the **Type** of the Guardrail being collected. The values are W-Beam, Cable, Box Beam and other.
Height	A Numeric Field used to enter the **Height** of the Guardrail. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
End Section	A Menu Field used to select the **End Section** of the Guardrail being collected. The values are ET-2000+, ET-2000, BEST, MELT, One-way Departure, Intersecting Roadway, Texas Twist, Cable, Box Beam and other.
Post	A Menu Field used to select the **Post** of the Guardrail being collected. The values are Metal w/Rubber Blocks, Wood Post, Concrete Post, Metal Post and other.
COMMENT	A String Field used to enter general comments.

GUYWIRE		**Class**	**Sub-Class**
		Utility	Misc
Description	GUY WIRE ANCHOR		
General Summary			
This feature is to represent a guy wire. The data points collected should represent the center of the wire and should be collected with the ground anchor first and the pole connection second. Actual elevations are required for the overhead portion of the guy wire.			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie GY01).		
COMMENT	A String Field used to enter general comments.		

HEADG		**Class**	**Sub-Class**
		Drainage	Water
Description	HEADGATE		
General Summary			
This feature is to represent a head gate structure. The data points collected should represent the top leeward face of the head gate structure. Additional data points may be necessary to fully describe this feature.			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie HG01).		
COMMENT	A String Field used to enter general comments.		

HIWATER	Class	Sub-Class
	Natural	Water
Description	HIGH WATER MARK	
General Summary		

This feature is to represent a high water mark. The data point collected should represent the upper most part of the watermark.

Attributes	
When	A String Field used to enter **When** the high water occurred.
Who	A String Field used to enter **Who** gave the high water occurrence information.
COMMENT	A String Field used to enter general comments.
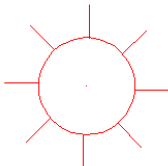
INLET	Class	Sub-Class
	Drainage	Water
Description	INLET -- SQUARE TOP	
General Summary		

This feature is to represent a square top inlet. The data point collected should represent the center of the inlet cover/grate. Additional information will be needed to define the concrete perimeter.

An Inlet can be in conjunction with a manhole; therefore, two data points may need to be collected, one for the Inlet and one for the Manhole (ie MHSD).

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Inlet being collected. The values are Curb Inlet, Drop Inlet, Median Inlet and other. Curb Inlet has a sub-type with values of Slotted Drain.
Width	A Numeric Field used to enter the **Width** of the Inlet. Decimals: 0, Minimum: 0, Maximum: 1000, Default: 0, Units: mm
COMMENT	A String Field used to enter general comments.

INLETR		Class	Sub-Class
		Drainage	Water
Description		INLET -- ROUND TOP	
General Summary			

This feature is to represent a round top inlet. The data point collected should represent the center of the inlet cover/grate. Additional information will be needed to define the concrete perimeter.

An Inlet can be in conjunction with a manhole; therefore, two data points may need to be collected, one for the Inlet and one for the Manhole (ie MHSD).

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Inlet being collected. The values are Drop Inlet and other.
Diameter	A Numeric Field used to enter the **Diameter** of the Inlet. Decimals: 0, Minimum: 0, Maximum: 1000, Default: 0, Units: mm
COMMENT	A String Field used to enter general comments.

IRR	Class	Sub-Class
	Drainage	Irrigation
Description	IRRIGATION FEATURE	
General Summary		

IRR

This feature is to represent an irrigation structure. The data point collected should represent the top center of the irrigation structure.

Attributes	
Type	A Menu Field used to select the **Type** of the Irrigation Feature being collected. The values are Screw Gate, Slide Gate, Check Structure, Turnout, Diversion Structure, Division Box, Drop Structure and other. See Irrigation Type Manual for Descriptions and Images.
comment	A String Field used to enter general comments.

ISLAND	Class	Sub-Class
	Misc	DTM
Description	DTM ISLAND	
General Summary		

This feature is to represent a DTM island boundary. A DTM island is an area that contains data on the inside of the boundary and not on the outside. Can be used inside an obscure area.

The data points collected should represent the outer most data points of the area being collected. Make sure to enclose the DTM island boundary as an area. Multiple boundaries may be utilized in one project, if the areas to be collected are not adjacent to one another.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie IS01).
comment	A String Field used to enter general comments.

JRRL		Class	Sub-Class
		Barrier	Rail
Description		JERSEY RAIL	

General Summary

This feature is to represent Jersey rail. The data points collected should represent one face of the Jersey rail at the existing surface level.

The transition section is used to taper from standard to tall types of Jersey rail as well as to other types of connections. The transition section will need two data points, one for each end.

For design purposes, this feature is non-symmetrical; therefore, make sure to collect data points for the same face of rail or transpose the appropriate chain segments so that they go in the same direction.

Attributes

Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie JR01).
Type	A Menu Field used to select the **Type** of the Jersey Rail being collected. The values are Portable, Cast-in-Place and other.
Height	A Menu Field used to select the **Height** of the Jersey Rail being collected. The values are Standard, Tall and other.
End Section	A Menu Field used to select the **End Section** of the Jersey Rail being collected. The values are Impact Attenuator, Tapered End, Transition Section and other.
comment	A String Field used to enter general comments.

LIGHT	Class	Sub-Class
	Utility	Power
Description	LIGHT POLE	
General Summary		

This feature is to represent a light pole. The data point collected should represent the center of the light pole.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
comment	A String Field used to enter general comments.

LOWBEAM	Class	Sub-Class
	Structure	Misc
Description	LOW BEAM	
General Summary		

This feature is to represent the low beam elevation of a structure.

There may be numerous data points for the low beam on any given structure. Low beam data points should be collected for, but not limited to, the following locations: in close proximity to the centerline of PTW or individual RR rails; waterway crossings; multi-level or curved structures (both horizontal & vertical).

If uncertain if a beam is on grade or if in a curved or spiraled section, collect data points near each end of each beam.

Attributes	
comment	A String Field used to enter general comments.

MAIL		Class	Sub-Class
		Road/RR	Road
Description	MAILBOX		
General Summary			

This feature is to represent a mailbox. The data point collected should represent the center of the post for a single-post or the center of the conglomeration of mailboxes for a multi-post.

Attributes	
Count	A Numeric Field used to enter the **Count** (the number) of mailboxes. Decimals: 0, Minimum: 0, Maximum: 100, Default: 0, Units: <None>
comment	A String Field used to enter general comments.

MH		Class	Sub-Class
		Utility	Manhole
Description		MANHOLE -- MISC	
General Summary			

This feature is to represent a generic manhole. The data point collected should represent the top center of the manhole lid or opening.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Manhole being collected. The values are Type 1 (cone), Type 3 (straight) and other.
Depth	A Numeric Field used to enter the **Depth** of the Manhole (top of grate/lid to bottom). Decimals: 1, Minimum: 0, Maximum: 100, Default: 0, Units: m
Diameter	A Numeric Field used to enter the inside **Diameter** of the Manhole barrel. Decimals: 1, Minimum: 0, Maximum: 10, Default: 0, Units: m
Offset	A Menu Field used to select the offset of the center of the manhole as compared to the lid. The values are Center (no offset), North, South, East and West.
Usage	***NOT USED AT THIS TIME***
comment	A String Field used to enter general comments.

MHELEC	Class	Sub-Class
	Utility	Manhole
Description	MANHOLE -- ELECTRICAL	
General Summary		

This feature is to represent an electrical manhole. The data point collected should represent the top center of the manhole lid or opening.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Manhole being collected. The values are Type 1 (cone), Type 3 (straight) and other.
Depth	A Numeric Field used to enter the **Depth** of the Manhole (top of grate/lid to bottom). Decimals: 1, Minimum: 0, Maximum: 100, Default: 0, Units: m
Diameter	A Numeric Field used to enter the inside **Diameter** of the Manhole barrel. Decimals: 1, Minimum: 0, Maximum: 10, Default: 0, Units: m
Offset	A Menu Field used to select the offset of the center of the manhole as compared to the lid. The values are Center (no offset), North, South, East and West.
comment	A String Field used to enter general comments.

MHSD		Class	Sub-Class
		Utility	Manhole
Description		MANHOLE -- STORM DRAIN	
General Summary			

This feature is to represent a storm drain manhole. The data point collected should represent the top center of the manhole lid or opening.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Manhole being collected. The values are Type 1 (cone), Type 3 (straight) and other.
Depth	A Numeric Field used to enter the **Depth** of the Manhole (top of grate/lid to bottom). Decimals: 1, Minimum: 0, Maximum: 100, Default: 0, Units: m
Diameter	A Numeric Field used to enter the inside **Diameter** of the Manhole barrel. Decimals: 1, Minimum: 0, Maximum: 10, Default: 0, Units: m
Offset	A Menu Field used to select the offset of the center of the manhole as compared to the lid. The values are Center (no offset), North, South, East and West.
comment	A String Field used to enter general comments.

MHSS		Class	Sub-Class
		Utility	Manhole
Description		MANHOLE -- SANITARY SEWER	
General Summary			
This feature is to represent a sanitary sewer manhole. The data point collected should represent the top center of the manhole lid or opening.			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).		
Type	A Menu Field used to select the **Type** of the Manhole being collected. The values are Type 1 (cone), Type 3 (straight) and other.		
Depth	A Numeric Field used to enter the **Depth** of the Manhole (top of grate/lid to bottom). Decimals: 1, Minimum: 0, Maximum: 100, Default: 0, Units: m		
Diameter	A Numeric Field used to enter the inside **Diameter** of the Manhole barrel. Decimals: 1, Minimum: 0, Maximum: 10, Default: 0, Units: m		
Offset	A Menu Field used to select the offset of the center of the manhole as compared to the lid. The values are Center (no offset), North, South, East and West.		
comment	A String Field used to enter general comments.		

MHTEL		Class	Sub-Class
		Utility	Manhole
Description		MANHOLE -- TELEPHONE	
General Summary			

This feature is to represent a telephone manhole. The data point collected should represent the top center of the manhole lid or opening.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Manhole being collected. The values are Type 1 (cone), Type 3 (straight) and other.
Depth	A Numeric Field used to enter the **Depth** of the Manhole (top of grate/lid to bottom). Decimals: 1, Minimum: 0, Maximum: 100, Default: 0, Units: m
Diameter	A Numeric Field used to enter the inside **Diameter** of the Manhole barrel. Decimals: 1, Minimum: 0, Maximum: 10, Default: 0, Units: m
Offset	A Menu Field used to select the offset of the center of the manhole as compared to the lid. The values are Center (no offset), North, South, East and West.
comment	A String Field used to enter general comments.

MILEP	Class	Sub-Class
	Road/RR	Signs
Description	MILE POST	

General Summary

This feature is to represent a milepost sign. The data point collected should represent the center of the pole.

Attributes		
Type	A Menu Field used to select the **Type** of the Mile Post being collected. The values are single, double and other.	
Text	A Numeric Field used to enter the numerical mile value. Decimals: 0, Minimum: 0, Maximum: 1000, Default: 0, Units: \<None\>	
comment	A String Field used to enter general comments.	

MISCAB	Class	Sub-Class
	Utility	Misc
Description	MISSILE CABLE	

General Summary

This feature is to represent a missile cable. The data points collected should represent the painted/flagged marks located on the existing surface.

Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie MC01).	
comment	A String Field used to enter general comments.	

MISCDL	Class	Sub-Class
	Misc	DTM
Description	MISC DTM LINE	
General Summary		
This feature is to represent a generic DTM feature. The data points collected should represent the break.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie MD01).	
comment	A String Field used to enter general comments.	

MISCDP	Class	Sub-Class
	Misc	DTM
Description	MISC DTM POINT	
General Summary		

This feature is to represent a generic DTM point. The data point collected should represent the center of the mass.

Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).	
comment	A String Field used to enter general comments.	

MISCL		Class	Sub-Class
		Misc	Misc
Description		MISC NON-DTM LINE	
General Summary			
This feature is to represent a generic non-DTM feature. The data points collected should represent the break.			
Attributes			
Chain		A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie ML01).	
comment		A String Field used to enter general comments.	

MISCP		Class	Sub-Class
		Misc	Misc
Description		MISC NON-DTM POINT	
General Summary			

This feature is to represent a generic non-DTM point. The data point collected should represent the center of the mass.			
Attributes			
Chain		A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).	
comment		A String Field used to enter general comments.	

OBSCURE	**Class**	**Sub-Class**
	Misc	DTM
Description	DTM OBSCURE AREA	
General Summary		

This feature is to represent a DTM obscure boundary. A DTM obscure area (void) is an area that contains data on the outside of the boundary, but not on the inside.

The data points collected should represent the outer most data points of the area being collected. Make sure to enclose the DTM obscure boundary as an area. Multiple boundaries may be utilized in one project if the areas to be collected are not adjacent to one another.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie OB01).
comment	A String Field used to enter general comments.

PEDBASE	**Class**	**Sub-Class**
	Utility	Misc
Description	PEDESTAL BASE	
General Summary		

This feature is to represent a pedestal base or any other base that needs to be collected (ie Light or Signal Poles). The data points collected should represent the outer edge of the pedestal base. Make sure to enclose the pedestal base as an area.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie PB01).
Type	A Menu Field used to select the **Type** of the Base being collected. The values are Electrical, Telephone, Traffic, Pole and other.
comment	A String Field used to enter general comments.
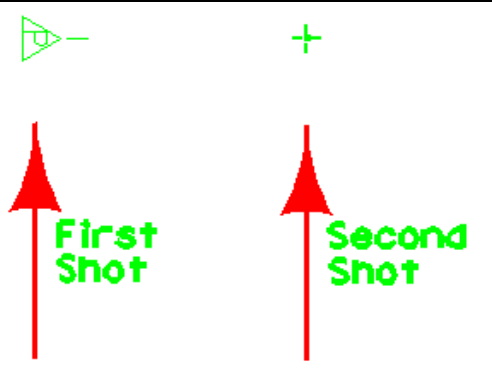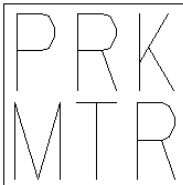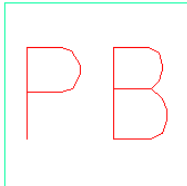
PEDXING	Class	Sub-Class
	Utility	Traffic
Description	PEDESTRIAN CROSSING	
General Summary		

This feature is to represent a pedestrian crossing. The data point collected should represent the center of the pole/post.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Pedestal Base being collected. The values are Push Button, Signal Head, Both and other.
comment	A String Field used to enter general comments.

PHOTO	Class	Sub-Class
	Misc	Misc
Description	PHOTOGRAPHY LOCATION POINT	
General Summary		

This feature is to represent a photography location point. The data points collected should represent first, the location the camera and second, the direction of the photo. The second (directional data point) can be as easy as taking one pace in the direction of the photo. See above graphic.

The second data point should use the Feature Code DATAPT.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie PH01).
Name	A String Field used to enter the **Name** given to the Photo.
comment	A String Field used to enter general comments.

PM	Class	Sub-Class
	Survey	Misc
Description	PROJECT MARKER	
General Summary		

This feature is to represent a project marker. The data point collected should represent the top center of the marker.

Attributes	
Text	A String Field used to enter the Project Marker information.
comment	A String Field used to enter general comments.

PRKMETER	Class	Sub-Class
	Road/RR	Misc
Description	PARKING METER	
General Summary		

This feature is to represent a parking meter. The data point collected should represent the center of the post.

Attributes		
comment	A String Field used to enter general comments.	
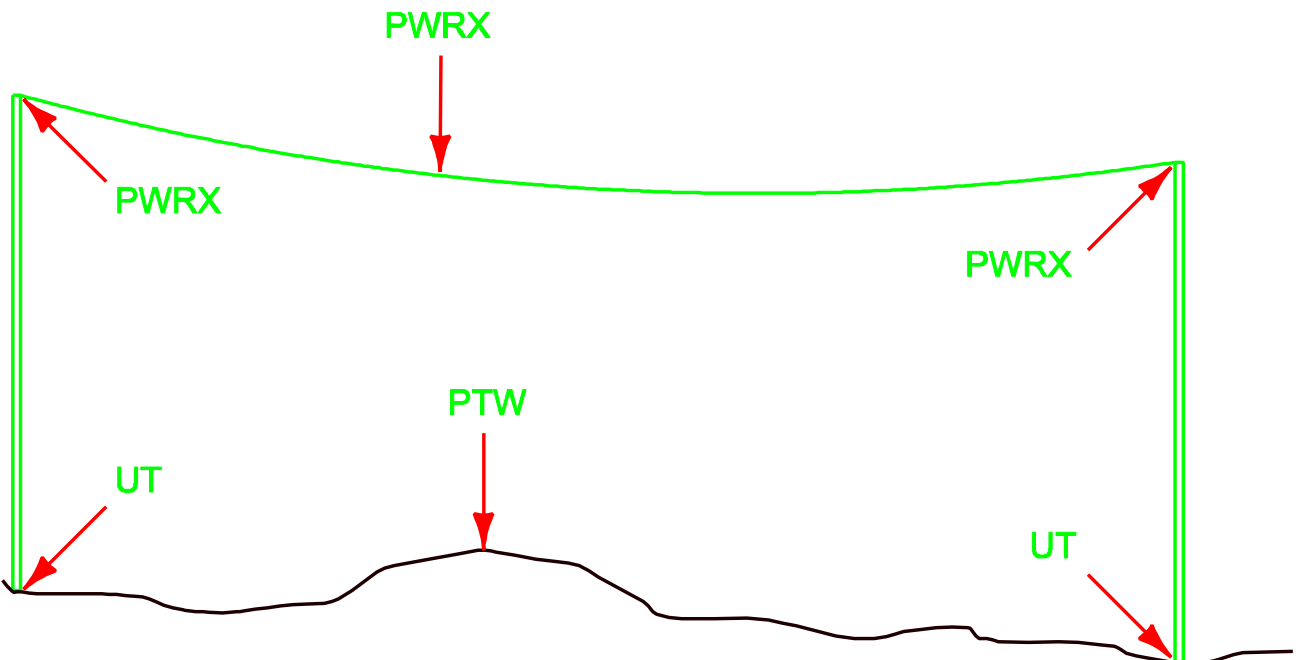
PTW	Class	Sub-Class
	Road/RR	Road
Description	PTW -- CENTERLINE	

General Summary

This feature is to represent the centerline of the PTW. The data points collected should represent the break located at or near the centerline.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie CL01).
comment	A String Field used to enter general comments.

PULLBOX	Class	Sub-Class
	Utility	Power
Description	SERVICE PULL-BOX	

General Summary		

This feature is to represent a service pull box. The data point collected should represent the top center of the pull box lid.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
comment	A String Field used to enter general comments.

PVTMARK		**Class**	**Sub-Class**
		Road/RR	Misc
Description	PAVEMENT MARKINGS		
General Summary			
This feature is to represent either the pavement striping or markings. This feature will normally be used for a Traffic/Safety Study, but may also be called out for other reasons in the Survey Request Form. The striping data points collected should represent the center of the stripe. The marking (symbol) data point collected should represent the center of the cell as indicated in the Signing Symbols Manual.			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie PV01).		
Matl Type	A Menu Field used to select the **Matl Type** of the Pavement Marking being collected. The values are Paint, Tape, Inlaid and other.		
Color	A Menu Field used to select the **Color** of the Pavement Marking being collected. The values are White, Yellow and other.		
Striping	A Menu Field used to select the **Striping** type of the Pavement Marking being collected. The values are Skip, Solid and other.		
Width	A Numeric Field used to enter the **Width** of the Striping. Decimals: 0, Minimum: 0, Maximum: 1000, Default: 0, Units: mm		
Symbol	A Menu Field used to select the **Symbol** of the Pavement Marking being collected. The values are listed in the Pavement Marking Section of the Signing Symbols Manual.		
comment	A String Field used to enter general comments.		

PWRPED	**Class**	**Sub-Class**
	Utility	Power
Description	POWER PEDESTAL	
General Summary		

This feature is to represent a power pedestal. The data point collected should represent the center of the power pedestal.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Power Pedestal being collected. The values are Pole Mount, Ground Mount and other.
Box Number	A String Field used to enter the **Box Number** found on the Power Pedestal.
comment	A String Field used to enter general comments.

PWRU	**Class**	**Sub-Class**
	Utility	Power
Description	POWER LINE -- UNDERGROUND	
General Summary		
This feature is to represent an underground power cable. The data points collected should represent the painted/flagged marks located on the existing surface.		

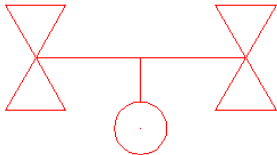| **Attributes**	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie PU01).
comment	A String Field used to enter general comments.

PWRX		Class	Sub-Class
		Utility	Power
Description	POWER LINE -- OVERHEAD		
General Summary			

When collecting data points for a power line (or similar) crossing, collect the data points as indicated in the above graphic. This feature is to represent an overhead power cable. The data points collected should represent the center of the power cable. Actual elevations are required for the overhead power line.

Attributes	
Utility 1	A Menu Field used to select the **Type** of the first (lowest) Overhead Utility being collected. The values are unknown, Cable TV, Fiber Optic, Power and Telephone. Unknown, Cable TV, Fiber Optic, Power and Telephone have a sub-Type with values of 1 through 6 wires.
Utility 2	A Menu Field used to select the **Type** of the second Overhead Utility being collected. The values are unknown, Cable TV, Fiber Optic, Power and Telephone. Unknown, Cable TV, Fiber Optic, Power and Telephone have a sub-Type with values of 1 through 6 wires.

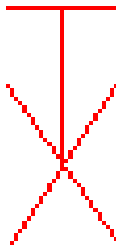| Utility 3	A Menu Field used to select the **Type** of the third Overhead Utility being collected. The values are unknown, Cable TV, Fiber Optic, Power and Telephone.
	Unknown, Cable TV, Fiber Optic, Power and Telephone have a sub-Type with values of 1 through 6 wires.
Utility 4	A Menu Field used to select the **Type** of the fourth Overhead Utility being collected. The values are unknown, Cable TV, Fiber Optic, Power and Telephone.
	Unknown, Cable TV, Fiber Optic, Power and Telephone have a sub-Type with values of 1 through 6 wires.
Utility 5	A Menu Field used to select the **Type** of the fifth Overhead Utility being collected. The values are unknown, Cable TV, Fiber Optic, Power and Telephone.
	Unknown, Cable TV, Fiber Optic, Power and Telephone have a sub-Type with values of 1 through 6 wires.
Utility 6	A Menu Field used to select the **Type** of the sixth Overhead Utility being collected. The values are unknown, Cable TV, Fiber Optic, Power and Telephone.
	Unknown, Cable TV, Fiber Optic, Power and Telephone have a sub-Type with values of 1 through 6 wires.
Clearance	A Numeric Field used to enter the **Clearance** of the Overhead Utility Crossing and the Centerline of the PTW.
	Decimals: 1, Minimum: 0, Maximum: 500, Default: 0, Units: m
comment	A String Field used to enter general comments.

RIPRAP	Class	Sub-Class
	Drainage	Misc
Description	RIPRAP BOUNDARY	
General Summary		
This feature is to represent a riprap boundary. The data points collected should represent the outer most data points of the area being collected. Make sure to enclose the riprap boundary as an area.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie RP01).	
Type	A Menu Field used to select the **Type** of the Riprap being collected. The values are Random, Handlaid, Grouted, Gabion and other.	
Class	A Menu Field used to select the **Class** of the Riprap being collected. The values are Class I, Class II, Class III and other.	
comment	A String Field used to enter general comments.	

RP	Class	Sub-Class
	CONSTRUCTION	MISC
Description	REFERENCE POINT	
General Summary		
This feature is to represent a point that references another point at a certain distance.		
Attributes		
comment	A String Field used to enter general comments.	

RRCL	Class	Sub-Class
	Road/RR	RR
Description	RR CENTERLINE	
General Summary		
This feature is to represent the centerline of the railway/rail road. The data points collected should represent the center of the tracks of the railway/rail road.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie RR01).	
comment	A String Field used to enter general comments.	

RRCRL	Class	Sub-Class
	Road/RR	RR
Description	RR CROSSING LIGHT	

General Summary

This feature is to represent a railroad crossing light. The data point collected should represent the center of the pole.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Cross Arm	A Menu Field used to select if there is a **Cross Arm** attached to the Crossing Light being collected. The values are Yes and No.
comment	A String Field used to enter general comments.
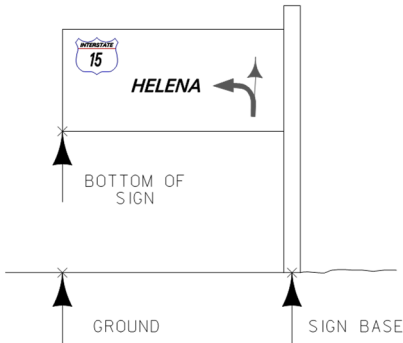
RRRAIL	Class	Sub-Class
	Road/RR	RR
Description	RR RAIL - TOP	

General Summary

This feature is to represent the rail of the railway/rail road. The data points collected should represent the top center of each track of the railway/rail road.

This feature is only necessary where it crosses under an existing structure and at a minimum shall consist of three evenly spaced data points (approximately 10 meters apart) on each side of and one directly underneath the structure for a total of seven data points per rail.

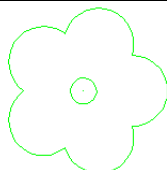| Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie RL01).
comment	A String Field used to enter general comments.

RRSW	Class	Sub-Class
	Road/RR	RR
Description	RR SWITCH	

General Summary	

This feature is to represent a railroad switch. The data point collected should represent the center of the switch mechanism.

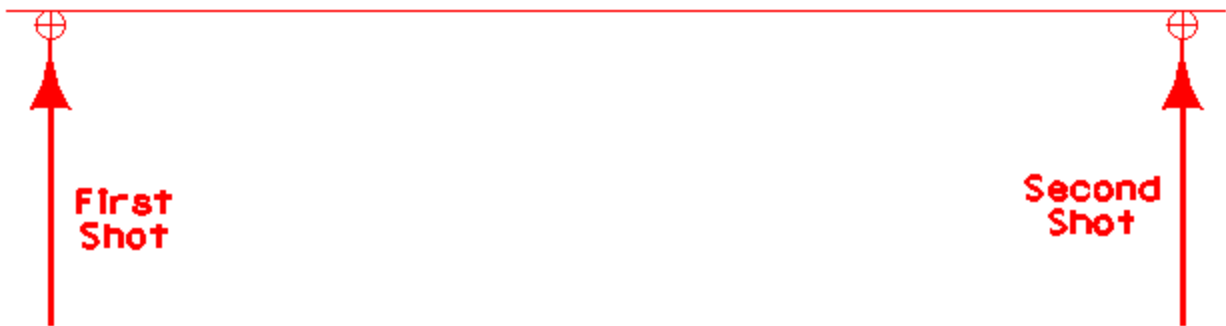| **Attributes**	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
comment	A String Field used to enter general comments.

SANSEW	Class	Sub-Class
	Utility	Drainage
Description	SANITARY SEWER LINE	

General Summary
This feature is to represent an underground sanitary sewer line. The data points collected should represent the invert elevations at all locations accessible through manholes, inlets, etc.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie SS01).
Size	A Numeric Field used to enter the inside **Size** (diameter) of the Lateral or Trunk Lines as measured at a manhole or inlet. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
comment	A String Field used to enter general comments.

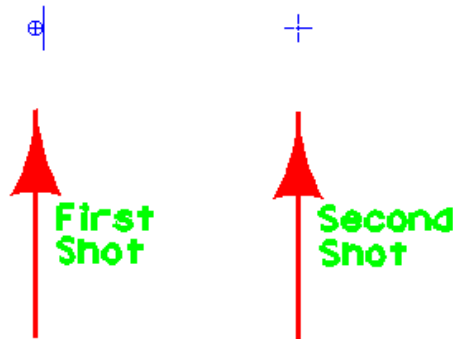| SHLD	Class	Sub-Class
	Road/RR	Road
Description	SHOULDER	
General Summary		
This feature is to represent the shoulder of the roadway section. The data points collected should represent the break defined by the shoulder.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie SH01).	
comment	A String Field used to enter general comments.	
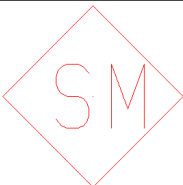
SHRUB	Class	Sub-Class
	Natural	Vegetation
Description	SHRUB	
General Summary		
This feature is to represent a shrub. The data point collected should represent the center of the shrub.		
Attributes		
Comment	A String field used to enter general comments.	

SIGNC		Class	Sub-Class
		Road/RR	Signs
Description		SIGN -- CANTILEVER	
General Summary			

This feature is to represent a cantilever or overhead sign. The data points collected should represent the center of signpost, existing surface level, and the bottom of sign.

When collecting data points for a cantilever sign, collect the data points as indicated in the above graphic.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie SN01).
Type	A Menu Field used to select the **Type** of the Cantilever Sign being collected. The values are Guide, Regulatory, Warning and other. Guide, Regulatory and Warning have sub-types. The values are listed in their respective sections of the Signing Symbols Manual.
Text	A String Field used to enter replaceable **Text**.
Post	A Menu Field used to select the **Post** type of the Cantilever Sign being collected. The values are Metal, Wood, Pole Mount and other. Metal has a sub-Type with values of Tubular Steel, Tubular Stl – Sq-Perf, Structural Steel, Steel U Sign Post and other.
Post Size	A Numeric Field used to enter the **Post Size** of the Post. Decimals: 0, Minimum: 0, Maximum: 1000, Default: 0, Units: mm Post Size is not needed for the **Types** Structural Steel and Steel U Sign Post.
Break-Away	A Menu Field used to select if there is a **Break-Away** on the Sign being collected, if any. The values are Yes and No.
comment	A String Field used to enter general comments.

SIGNM		Class	Sub-Class
		Road/RR	Signs
Description		SIGN -- MULTI-POST	
General Summary			

This feature is to represent a multi-post sign. The data points collected should represent the center of each signpost.

Multi-post signs shall be collected in a right to left manner when facing the sign (ie able to read the sign text). See above graphic.

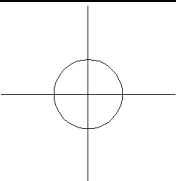| Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie SN01).
Type	A Menu Field used to select the **Type** of the Multi-post Sign being collected. The values are Guide, Regulatory, Warning and other. Guide, Regulatory and Warning have sub-types. The values are listed in their respective sections of the Signing Symbols Manual.
Text	A String Field used to enter replaceable **Text**.
Post	A Menu Field used to select the **Post** type of the Multi-post Sign being collected. The values are Metal, Wood, Pole Mount and other. Metal has a sub-Type with values of Tubular Steel, Tubular Stl – Sq-Perf, Structural Steel, Steel U Sign Post and other.
Post Size	A Numeric Field used to enter the **Post Size** of the Post. Decimals: 0, Minimum: 0, Maximum: 1000, Default: 0, Units: mm Post Size is not needed for the **Types** Structural Steel and Steel U Sign Post.
Break-Away	A Menu Field used to select if there is a **Break-Away** on the Sign being collected, if any. The values are Yes and No.
comment	A String Field used to enter general comments.

SIGNS	**Class**	**Sub-Class**
	Road/RR	Signs
Description	SIGN -- SINGLE-POST	

General Summary

This feature is to represent a single-post sign. The data points collected should represent first, the location of the center of the sign post and second, the direction the sign is facing. The second (directional data point) can be as easy as taking one pace in the direction away from the sign face. See above graphic.

The second data point should use the Feature Code DATAPT.

Attributes

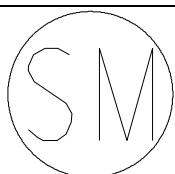| **Chain**	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie SN01).
Type	A Menu Field used to select the **Type** of the Single-post Sign being collected. The values are Guide, Regulatory, Warning and other. Guide, Regulatory and Warning have sub-types. The values are listed in their respective sections of the Signing Symbols Manual.
Text	A String Field used to enter replaceable **Text**.
Post	A Menu Field used to select the **Post** type of the Single-post Sign being collected. The values are Metal, Wood, Pole Mount and other. Metal has a sub-Type with values of Tubular Steel, Tubular Stl – Sq-Perf, Structural Steel, Steel U Sign Post and other. To locate the sign that is pole-mounted, collect the data point directly under the center of the sign and proceed with the rest of the procedure.
Post Size	A Numeric Field used to enter the **Post Size** of the Post relative to the type of Post. Decimals: 0, Minimum: 0, Maximum: 1000, Default: 0, Units: mm Post Size is not needed for the **Types** Structural Steel and Steel U Sign Post.

Break-Away	A Menu Field used to select if there is a **Break-Away** on the Sign being collected, if any. The values are Yes and No.
comment	A String Field used to enter general comments.

SM		**Class**	**Sub-Class**
		Survey	Misc
Description	STATION MARKER		
General Summary			

This feature is to represent a station marker. The data point collected should represent the top center of the station marker.

Attributes	
Text	A String Field used to enter the Station Marker information.
comment	A String Field used to enter general comments.

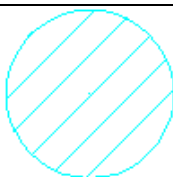| **SNOWF**		**Class**	**Sub-Class**
		Barrier	Fence
Description	SNOW FENCE		

General Summary

This feature is to represent a snow fence. The data points collected should represent the face of the fence on top of the existing surface. Data points should be collected at center face of posts when collecting changes in direction.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie SF01).
Type	A Menu Field used to select the **Type** of the Snow Fence being collected. The values are Plastic, Slatted, Wood and other.
Height	A Numeric Field used to enter the **Height** of the Snow Fence. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
comment	A String Field used to enter general comments.

STID	Class	Sub-Class
	Road/RR	Signs
Description	SIGN -- STREET ID	

General Summary

This feature is to represent a street ID sign. The data point collected should represent the center of the post.

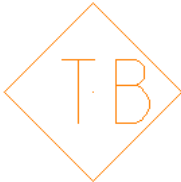| **Attributes**	
Text	A String Field used to enter replaceable **Text**.
Mount Type	A Menu Field used to select the **Mount Type** of the Street ID Sign being collected. The values are Ground, Overhead and other.
comment	A String Field used to enter general comments.

STRMDR	Class	Sub-Class
	Utility	Drainage
Description	STORM DRAIN LINE	

General Summary

This feature is to represent an underground storm drain line. The data points collected should represent the invert elevations at all locations accessible through manholes, inlets, etc.

This feature is not normally part of the SUE survey request; therefore, the data shall be collected by Field personnel, unless otherwise notified that it will be part of the SUE survey contract.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie SD01).
Size	A Numeric Field used to enter the inside **Size** (diameter) of the Lateral or Trunk Lines as measured at a manhole or inlet. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
comment	A String Field used to enter general comments.

SURV		**Class**	**Sub-Class**
		Survey	Misc
Description	SURVEY MONUMENT		
General Summary			

This feature is to represent a generic survey monument. The data point collected should represent the center of the punch mark if one exists or the center of the monument if not.

Attributes	
comment	A String Field used to enter general comments.

SW		**Class**	**Sub-Class**
		Road/RR	Road
Description	SIDEWALK		
General Summary			

This feature is to represent the edge of a concrete sidewalk. The data points collected should represent the edge of the concrete.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie SW01).
COMMENT	A String Field used to enter general comments.

TANK	Class	Sub-Class
	Structure	Tank
Description	STORAGE TANK -- ROUND	
General Summary		

This feature is to represent a round storage tank. The data point collected should represent the center of the tank.

Attributes		
comment	A String Field used to enter general comments.	

TANKSH	Class	Sub-Class
	Structure	Tank
Description	STORAGE TANK -- SHAPE	
General Summary		

This feature is to represent a storage tank shape. The data points collected should represent the outer most edge of the tank. Make sure to enclose the tank shape as an area.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie TN01).
comment	A String Field used to enter general comments.

TELBTH	Class	Sub-Class
	Utility	Communication
Description	TELEPHONE BOOTH	
General Summary		

This feature is to represent a telephone booth. The data point collected should represent the center of the telephone booth.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
comment	A String Field used to enter general comments.

TELPED	Class	Sub-Class
	Utility	Communication
Description	TELEPHONE PEDESTAL	
General Summary		

This feature is to represent a telephone pedestal. The data point collected should represent the center of the pedestal.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Telephone Pedestal being collected. The values are Pole Mount, Ground Mount and other.
Box Number	A String Field used to enter the **Box Number** found on the Telephone Pedestal.
comment	A String Field used to enter general comments.

TELU		**Class**	**Sub-Class**
		Utility	Communication
Description	TELEPHONE LINE -- UNDERGROUND		
General Summary			
This feature is to represent an underground telephone line. The data points collected should represent the painted/flagged marks located on the existing surface.			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie TU01).		
comment	A String Field used to enter general comments.		

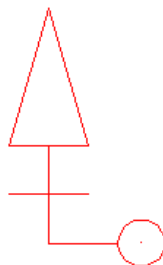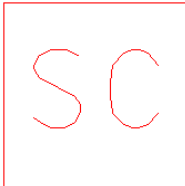| **TELX**		**Class**	**Sub-Class**
		Utility	Communication
Description	TELEPHONE LINE -- OVERHEAD		
General Summary			
This feature is to represent an overhead telephone line. The data points collected should represent the center of the telephone line. Actual elevations are required for the overhead telephone line.			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie TX01).		
comment	A String Field used to enter general comments.		

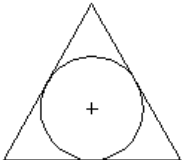| **THALWEG**		**Class**	**Sub-Class**
		Natural	Water
Description	THALWEG OF WATERWAY		
General Summary			
This feature is to represent the thalweg of a waterway. The data points collected should represent the lowest point of the waterway.			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie TW01).		
Waterway Name	A String Field used to enter the **Waterway Name** given to the waterway being collected.		
comment	A String Field used to enter general comments.		

TOB	Class	Sub-Class
	Natural	Land
Description	TOP OF BANK	
General Summary		
This feature is to represent a top of bank (natural made slope). The data points collected should represent the upper most break of the bank.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie TB01).	
comment	A String Field used to enter general comments.	

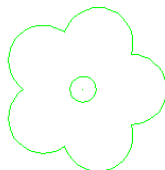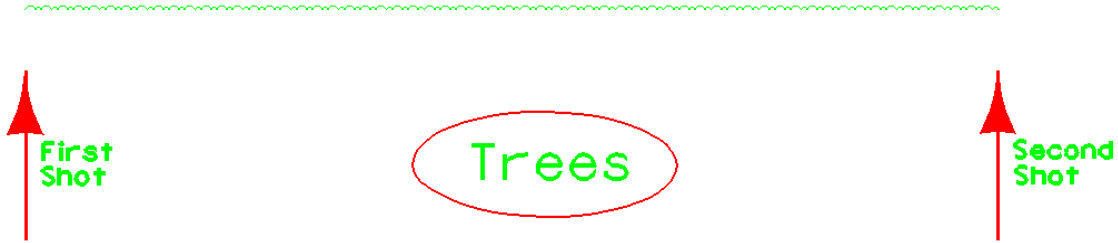| TOS	Class	Sub-Class
	Road/RR	Road
Description	TOP OF SLOPE	
General Summary		
This feature is to represent a top of slope (man-made slope). The data points collected should represent the upper most break of the slope.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie TS01).	
comment	A String Field used to enter general comments.	

TOWER	Class	Sub-Class
	Utility	Misc
Description	TOWER FEATURE	

General Summary

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 _____
|           |
| T W R     |
|           |
|_____|
```

This feature is to represent a tower feature. The data point collected should represent the center of the tower.

Attributes

Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Tower Feature being collected. The values are Communication, Radio, Television and other.
comment	A String Field used to enter general comments.

TRAF	Class	Sub-Class
	Utility	Traffic
Description	TRAFFIC SIGNAL	

General Summary

This feature is to represent a traffic signal/light. The data point collected should represent the center of the pole.

Attributes

Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
comment	A String Field used to enter general comments.

TRAFBOX	Class	Sub-Class
	Utility	Traffic
Description	TRAFFIC/SIGNAL CONTROLLER BOX	
General Summary		

This feature is to represent a traffic/signal controller box. The data point collected should represent the center of the box.

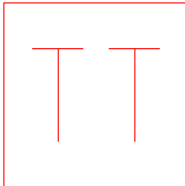| **Attributes**		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Box Number	A String Field used to enter the **Box Number** found on the Traffic Signal/Controller Box.
comment	A String Field used to enter general comments.

TRAV	Class	Sub-Class
	Survey	Control
Description	TRAVERSE MARKER	
General Summary		

This feature is to represent a traverse (control) point. The data point collected should represent the center of the punch mark of the marker.

Attributes		
comment	A String Field used to enter general comments.

TREE		Class	Sub-Class
		Natural	Vegetation
Description	TREE		

General Summary			
This feature is to represent a tree. The data point collected should represent the center of the tree.			

Attributes	
Species	A Menu Field used to select the **Species** of the Tree being collected. The values are deciduous and evergreen.
Total Height	A Numeric Field used to enter the **Total Height** of the Tree. Decimals: 1, Minimum: 0, Maximum: 100, Default: 0, Units: m
Trunk Diameter	A Numeric Field used to enter the **Trunk Diameter** of the Tree. Decimals: 2, Minimum: 0, Maximum: 5, Default: 0, Units: m
Canopy Radius	A Numeric Field used to enter the **Canopy Radius** of the Tree. Decimals: 1, Minimum: 0, Maximum: 25, Default: 0, Units: m
comment	A String Field used to enter general comments.

TREELN	Class	Sub-Class
	Natural	Vegetation
Description	TREE LINE -- BOUNDARY	
General Summary		

This feature is to represent a tree line boundary. The data points collected should represent the outer most data points of the area being collected. Make sure to enclose the tree line boundary as an area if applicable. See above graphic.

Note that the line is non-symmetrical; therefore, the data points will need to be collected so that trees are enclosed on the appropriate side of the line. See above graphic.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie TL01).
comment	A String Field used to enter general comments.

TREEROW	Class	Sub-Class
	Natural	Vegetation
Description	TREE -- ROW	
General Summary		

This feature is to represent a tree row. The data points collected should represent the center of the tree row.

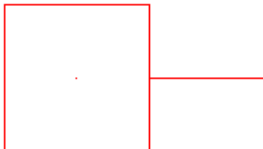| **Attributes**	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie TR01).
comment	A String Field used to enter general comments.

TRNSTWR	Class	Sub-Class
	Utility	Power
Description	TRANSMISSION TOWER	
General Summary		

This feature is to represent a transmission tower. The data point collected should represent the center of the tower.

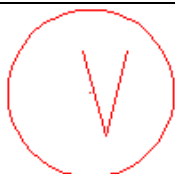| **Attributes**		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).	
comment	A String Field used to enter general comments.	

TVU	Class	Sub-Class
	Utility	Communication
Description	CABLE TV -- UNDERGROUND	
General Summary		

This feature is to represent an underground cable TV. The data points collected should represent the painted/flagged marks located on the existing surface.

Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie VU01).	
comment	A String Field used to enter general comments.	

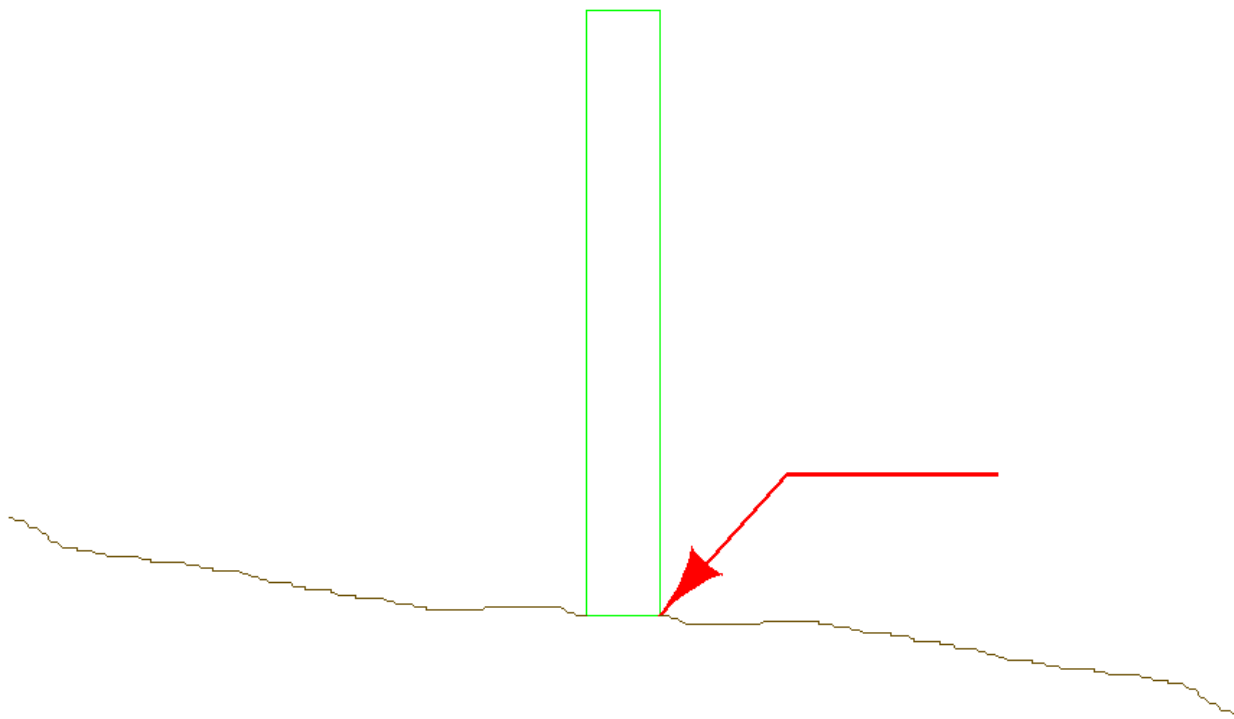| TVX	Class	Sub-Class
	Utility	Communication
Description	CABLE TV -- OVERHEAD	
General Summary		
This feature is to represent an overhead cable TV. The data points collected should represent the center of the TV cable. Actual elevations are required for the overhead TV cable.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie VX01).	
comment	A String Field used to enter general comments.	

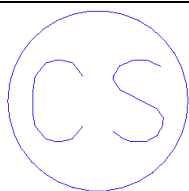| UHS	Class	Sub-Class
	Misc	Misc
Description	UNDERGROUND HAZARD SITE	
General Summary		
This feature is to represent an underground hazard site. The data points collected should represent the outer most data points of the area being collected. Make sure to enclose the underground hazard site as an area if applicable.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie UH01).	
comment	A String Field used to enter general comments.	

UT		Class	Sub-Class
		Utility	Power
Description		UTILITY POLE	
General Summary			

This feature is to represent all utility poles. The data point collected should represent the center of the pole.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Utility Pole being collected. The values are Wood, Steel, Laminated, Fiberglass and other.
Pole Number	A String Field used to enter the **Pole Number** found on the Utility Pole.
UG Drop	A Menu Field used to select if there is an **Underground Drop** on the Power Pole being collected, if any. The values are Yes and No.
comment	A String Field used to enter general comments.

VALVE	Class	Sub-Class
	Utility	Misc
Description	VALVE -- MISC	
General Summary		

This feature is to represent a generic valve. The data point collected should represent the center of the valve.

Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).	
Type	A Menu Field used to select the **Type** of the Valve being collected. The values are Above Ground and Below Ground.	
Pipe Diameter	A Numeric Field used to enter the **Pipe Diameter** of the Valve. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm	
comment	A String Field used to enter general comments.	

VEG	Class	Sub-Class
	Natural	Vegetation
Description	VEGETATION BOUNDARY	
General Summary		
This feature is to represent a vegetation boundary. The data points collected should represent the outer most data points of the area being collected. Make sure to enclose the vegetation boundary as an area if applicable.		
Attributes		
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie VG01).	
comment	A String Field used to enter general comments.	

WALL	Class	Sub-Class
	Structure	Barrier

Description	WALL -- FREE STANDING

General Summary

This feature is to represent a freestanding wall. The data points collected should represent the bottom of the freestanding wall. It is desirable to indicate width direction in reference to the direction of the collected data points.

In some situations, an actual elevation may be desirable for the top of the wall.

Attributes

Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie WA01).
Height	A Numeric Field used to enter the **Height** of the Wall. Decimals: 0, Minimum: 0, Maximum: 10000, Default: 0, Units: mm
Width	A Numeric Field used to enter the **Width** of the Wall. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
comment	A String Field used to enter general comments.

WATCS	Class	Sub-Class
	Utility	Water
Description	WATER CURB STOP	
General Summary		

This feature is to represent a water curb stop. The data point collected should represent the center of the water curb stop.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Pipe Diameter	A Numeric Field used to enter the **Pipe Diameter** of the Water Curb Stop. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
comment	A String Field used to enter general comments.

WATER	Class	Sub-Class
	Utility	Water
Description	WATER LINE -- UNDERGROUND	
General Summary		
This feature is to represent an underground water line. The data points collected should represent the painted/flagged marks located on the existing surface.		

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie WT01).
Type	A Menu Field used to select the **Type** of the Water Line being collected. The values are Supply Line, Sprinkler System and other.
comment	A String Field used to enter general comments.

WATHYD	Class	Sub-Class
	Utility	Water
Description	WATER HYDRANT	
General Summary		

This feature is to represent a water hydrant. The data point collected should represent the center of the water hydrant.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
comment	A String Field used to enter general comments.

WATM	Class	Sub-Class
	Utility	Water
Description	WATER METER	
General Summary		

This feature is to represent a water meter. The data point collected should represent the center of the water meter.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Pipe Diameter	A Numeric Field used to enter the **Pipe Diameter** of the Water Meter. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
comment	A String Field used to enter general comments.

WATV		Class	Sub-Class
		Utility	Water
Description	WATER VALVE		
General Summary			

This feature is to represent a water valve. The data point collected should represent the center of the water valve.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Type	A Menu Field used to select the **Type** of the Water Valve being collected. The values are Above Ground and Below Ground.
Pipe Diameter	A Numeric Field used to enter the **Pipe Diameter** of the Water Valve. Decimals: 0, Minimum: 0, Maximum: 5000, Default: 0, Units: mm
comment	A String Field used to enter general comments.

WELL		**Class**	**Sub-Class**
		Utility	Water
Description	WELL		
General Summary			

This feature is to represent a well. The data point collected should represent the center of the well.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XX01).
Diameter	A Numeric Field used to enter the **Diameter** of the Well. Decimals: 2, Minimum: 0, Maximum: 25, Default: 0, Units: m
Depth	A Numeric Field used to enter the **Depth** of the Well. Decimals: 1, Minimum: 0, Maximum: 1000, Default: 0, Units: m
comment	A String Field used to enter general comments.

WETLB		**Class**	**Sub-Class**
		Natural	Water
Description	WETLAND BOUNDARY		
General Summary			

This feature is to represent a wetland boundary. The data points collected should represent the outer most data points of the area being collected. Make sure to enclose the wetland boundary as an area if applicable.

Attributes	
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie WL01).
Name	A String Field used to enter the **Name** or Class given to the Wetland Boundary.
comment	A String Field used to enter general comments.

XSECT		Class	Sub-Class
		Misc	Misc
Description	CROSS-SECTION LINE		
General Summary			
This feature is to represent a generic cross section line. The data points collected should represent the best possible straight line perpendicular to the base line. For the purpose of Hydraulic X-Sections, the actual Feature Codes for the breaklines that are crossed should be used (ie TOB, BOB, EDGEWAT, THALWEG, etc)			
Attributes			
Chain	A String Field used to enter an alphanumeric value using the two-character codes as the prefix and incremental numbering of two digits as the suffix (ie XS01).		
comment	A String Field used to enter general comments.		

Blank Template

	Class	Sub-Class
Description		
General Summary		
Attributes		
comment	A String Field used to enter general comments.	